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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/502,143	02/11/2000	Aura Ganz	10359-004001	4808
26161	7590	03/14/2005	EXAMINER	
FISH & RICHARDSON PC 225 FRANKLIN ST BOSTON, MA 02110			KHUONG, LEE T	
			ART UNIT	PAPER NUMBER
			2665	

DATE MAILED: 03/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/502,143

Applicant(s)

GANZ ET AL.

Examiner

Lee Khuong

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-8,12,14-17,19-22 and 24-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-8,12,14-17,19-22 and 24-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/10/00 2/18/05
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-8, 12, 14-17, 19-22 and 24-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruszczyk et al. (US 5,886,993) hereinafter is referred as Ruszczyk in view of Messenger (US 5,276,680).

Regarding claims 1, 4, 8, 12, 15, 17, 21, 24, 30, 35, 41-45 and 47, Ruszczyk discloses a headend unit (910) that includes a connection manager (915) that provides connection admission control for efficient and fair allocation of network resources to individual end users subject to QOS constraints (col. 11, lines 31-39). The headend unit coordinates access to a shared medium, which may be a hybrid fiber-optic/coaxial (HFC) or wireless network (col. 2, lines 6-13). The headend unit provides access to such networks as the Internet, on-line services, telephone and cable networks (col. 2, lines 17-20). One constraint is that certain priority classes may be limited to a maximum number of contention mini-slots (col. 5, lines 44-47). A feedback controller (913) determines the assignment of mini-slots for each contention cycle and formats control messages, which may be targeted poll messages, downstream to the users. A headend scheduler (914) controls the timing of the control message transmissions by the feedback controller (col. 11, lines 44-53). The formation of targeted poll messages and timing of these messages meets the limitations of determining a polling pattern.

Art Unit: 2665

Ruszczyk fails to expressly disclose adapting assignment of the communications resources and adapting the polling pattern by adapting the rate of polling. Messenger discloses that the polling rate may be varied dynamically in response to the potentially changing in rate of data transmission to the handheld unit (18) (col. 8, lines 22-26). This meets the limitations of adapting the assignment of communication resources in accordance with received statistics. Messenger also discloses adapting a rate of polling associated with particular stations and continuing polling of the stations in accordance with an adapted polling pattern (col. 8, lines 22-50).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to adapt the allocation of resources and adapt the rate of polling each station in the polling pattern of Ruszczyk in accordance with changing transmission requirements of the network and the specific amount of activity at each station.

One of ordinary skill in the art would have been motivated to do this in order to provide more efficient allocation of resources.

Regarding claim 14, Ruszczyk discloses that the headend unit transmits data to an Access Interface Unit (AIU) on a downstream channel (col. 2, lines 21-28). The communication channels are carried by a shared medium such as a wireless network (col. 2, lines 10-13).

Regarding claims 20 and 28, Ruszczyk discloses connection admission control to users in accordance with QOS constraints. Maximum delay is a well-known QOS constraint.

Regarding claims 26 and 27, Ruszczyk discloses a headend unit (910), which represents the arbiter station of the present invention.

Regarding claims 31 and 32, Ruszczyk fails to expressly disclose assigning resources for a plurality of channels wherein assigning resources includes determining a separate polling pattern for each channel.

Messenger discloses a plurality of channels (Fig. 1, 16, 18, C1, *there are two communication channels between an unit 16 and a controller C1 and between an unit 18 and a controller C1*) wherein each channel may employs a specific polling rate (col. 8, lines 22-50).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to provide a separate polling rate for each channel so as to more efficiently tailor the assignment of resources to the specific polling rate on each channel.

Regarding claims 33 and 34, Ruszczyk discloses that the shared channel may be wireless and that the headend may be connected to a telephone network.

Regarding claim 36, Ruszczyk discloses a User Interface (925) in Figure 9. In order for anything to be displayed at a user interface level, i.e. application layer in the standard OSI seven layer model, the information must have traveled through the network layer to process the encapsulating protocol.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to provide software at the network layer to process accepted messages.

Art Unit: 2665

One of ordinary skill in the art would have been motivated to do this in order to prepare the information contained in the accepted message for the user interface.

Regarding claims 37 and 38, Ruszczyk fails to expressly disclose using an Ethernet protocol and Internet Protocol (IP).

Ethernet and IP are two protocols that are well known in the art and widely used.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use Ethernet and IP in the system provided by the teaching of Ruszczyk in view of Messenger.

One of ordinary skill in the art would have been motivated to do this to be compatible with systems that already use Ethernet and IP.

Regarding claim 46, Ruszczyk discloses that the headend may be connection to a communication network (140).

Claims 3, 16, 19, 22 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruszczyk in view of Messenger and further in view of Lyles et al. (US 5,917,822) hereinafter is referred as Lyles.

Regarding claims 3, 16, 19 and 22, the teaching provided by Ruszczyk and Messenger meets all of the limitations, except for accepting a request and admitting the new communication session provided available communication resources are not exceeded. Lyles discloses a head-end controller (105) that may be implemented as one or more programs executed by one or more

Art Unit: 2665

programmable processors (col. 9, lines 25-34). Lyles also discloses that terminal equipment (210) can transmit a request in response to a direct poll by the head-end controller (col. 10, lines 37-450. Access to an upstream channel is granted on a specific station basis. The grants are transmitted as messages in the downstream channel to the appropriate stations (col. 9, line 61 - col. 10, line 7).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the process of granted requested resources in the system provided by the teaching of Ruszczyk and Messenger.

It would have been obvious to only grant the requested resources if they did not exceed the maximum number of mini-slots allowed for a particular priority class.

One of ordinary skill in the art would have been motivated to use the contention based requesting and granting of resources because this is more efficient than polling when the rate of data transmission on a shared medium is low. One would have been motivated to deny a request if it exceeded the maximum number of mini-slots so as not to interfere with mini-slots designated for another priority class.

Regarding claim 25, the teaching provided by Ruszczyk and Messenger meets all of the limitations, except for adapting assignment of the communications resources and adapting the polling according to queue length.

Lyles discloses that the head-end controller maintains a representation of a queue for each traffic class for the terminal equipment in the form of a counter for the aggregate number of requests received but not yet granted for the identified terminal equipment (col. 14, lines 9-13).

Art Unit: 2665

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to adapt the assigning of resources and the polling pattern according to the queue counter for each terminal.

One of ordinary skill in the art would have been motivated to do this in order to allow terminals with a full queue to be polled to transmit data.

Claims 5, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruszczyk in view of Messenger as applied to claims 1, 4, 8, 12, 14, 15, 17, 20, 21, 24, 26, 27, 28, 30-38 and 41-47 above, and further in view of Schoch (US 5,973,609).

Regarding claims 5 and 6, the teaching provided by Ruszczyk and Messenger meets all of the limitations of claim 5, except assigning communications resources according to maximum intervals between polling of the plurality of sessions.

Schoch discloses dividing the stations to be polled into a number of groups. These groups are equivalent to the subsets of the present invention. The maximum number of groups allowed is equal to the total number of data terminals in the system (col. 5, lines 37-62). If the maximum number of groups is allowed, then the interval between polling of each session from each terminal would be at its maximum.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to divide the terminals into groups and use the maximum polling interval.

One of ordinary skill in the art would have been motivated to do this in order to decrease the number of collisions on the shared medium.

Art Unit: 2665

Regarding claim 7, Messenger teaches wherein monitoring data transmission includes collecting data retransmission statistics, and assigning communication resources includes adjusting data rate requirements in accordance with the collected retransmission statistics (see col. 8, lines 22-50).

Response to Arguments

Applicant's arguments with respect to claims 1, 3-8, 12, 14-17, 19-22 and 24-38 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

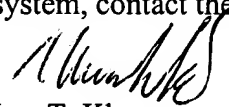
Joshi et al. (US 6,006,017); Way (US 5,768,280); Nassehi et al. (US 5,185,737); Ghaibeh (US 5,926,476), are cited to show an apparatus and a method of an Adaptive Media Control, which is considered pertinent to the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Khuong whose telephone number is 571-272-3157. The examiner can normally be reached on 9AM - 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on 571-272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2665

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Lee T. Khuong
Examiner
Art Unit 2665



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